UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
LU, KUEN S

ART UNIT	PAPER NUMBER
2177	

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/973,195	ANDERSSON ET AL.
	Examiner	Art Unit
	Kuen S Lu	2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _10 October 2001_.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-36_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) _1-36_ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
       1.☐ Certified copies of the priority documents have been received.
       2.☐ Certified copies of the priority documents have been received in Application No. _____.
       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _1/120401,6/012403_.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. In this case, "OBJECTA IN A COMPUER SYSTEM" does not indicate any query for a path of related objects.

Abstract

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it recites the claim 1 and contains phrase which can be implied, such as "is disclosed". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of

this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-17 and 36 are rejected under 35 U.S.C. 102(e) as anticipated by Srinivasan et al. (U.S. Patent 5,893,108, hereafter "Srinivasan").

As per the independent Claims 1 and 36, Srinivasan teaches the following:

"receiving a query for a path of related objects, the query including information regarding an object and relationships associated with the object" at col. 3, lines 36-40 and 47-49 where object query and associated set of pre-fetch paths are generated";

"analyzing the different relationships associated with objects in the system to select objects based on said information included in the query" at col. 3, lines 46-48 where the object query and associated paths for pre-fetch are analyzed to generate a set of database queries; and

"based on said analysis, selecting a path of related objects, one of the objects in the path being the object indicated by the query" at col. 3, line 64 – col. 4, line 5 where application objects are return to the application.

As per claim 2, Srinivasan teaches "the path of related objects extends between said one object and a root of a structure, said structure being arranged to organize objects relative to each other" at col. 9, lines 16-19 and 32-33 where object query is generated and its associated pre-fetch paths are translated from one object-oriented form to a nested object oriented structure whose root is at the top of the class.

As per claim 3, Srinivasan teaches "the step of analyzing comprises determination of the number of relationships each analyzed object has with other objects" at col. 3, lines 31-45 where the relationship attributes are constructed for retrieving objects and at col.

8, lines 4-11 where a software module is capable of retrieving all data needed to initialize the objects and the attributes as indicated which includes all relationships of each object.

As per claim 4, Srinivasan teaches "comprising selection of an object based on the analysis as a starting point for further examination" at col. 7, lines 31-45 where the top level object is the base for starting the recursive analysis.

As per claim 7, Srinivasan teaches "the query comprises a string of name items" at col. 6, lines 3-6 where the schema mapping module can be accessed and queried by the name of the class or collection.

As per claim 8, Srinivasan teaches "the string of name items is arranged in subsequent tokens, one token of the string indicating a name of one object and another token adjacent to the one token indicating a name of another object, said other object being a direct or indirect child or parent for said one object" at col. 12, lines 41-50 when after generating the application object, the object generator operates to create a new object table entry corresponding to the application object in the object table.

As per claim 9, Srinivasan teaches "the further examination comprises comparing relationships associated with the selected object to information in the query" at col. 3, line 64 – col. 4, line 11 where query results in relational tuples are translated into objects by setting relationship attributes in application objects equal to those pointers.

As per claim 10, Srinivasan teaches "the string of name items is broken into tokens before the step of analyzing" at col. 3, lines 46-52 where query is analyzed and a set of relational database queries are generated.

As per claim 11, Srinivasan teaches "the objects are placed in different structures, the structures associating the objects with different relationships categories" at col. 5, lines 23-39 when a query is executed, the schema module would map the object oriented database schema to the relational database schema as indicated by the arrows from the relational database before being converted into objects of object oriented database.

As per claim 12, Srinivasan teaches "the queried object and at least one other object indicated by the query are associated with different structures" at col. 5, lines 23-39 where the query result in the form of tuples is returned.

As per claim 16, Srinivasan teaches "the query contains information regarding at least one structure with which the object is expected to associate with" at Fig. 4 where application (element 104) submits object query and pre-fetch path to the query generator.

As per claim 19, Srinivasan teaches "the string of name items comprises at least one symbol between the name items" at col. 13, lines 45-48 where the period symbol '.' Connecting the strings 'Emp' and 'department' to form the pre-fetch path.

As per claim 20, Srinivasan teaches "at least one symbol describes the relation between the objects the said at least one symbol associates with" at col. 13, lines 45-48 where the period symbol establishes the relationship between department pointer in the Emp application object.

As per claim 21, Srinivasan teaches "the scope of the search performed in response to the query is limited by information in the query" at Fig. 4, elements 104, 402, 410,

112, 412, 404 and 414 where the query search scope is limited to the object query and pre-fetch path(s) entered by the application.

As per claim 22, Srinivasan teaches "the scope of the search accomplished in response to the query is limited by defining limitations to the search scope" at Fig. 4, elements 104, 402, 410, 112, 412, 404 and 414 where the query search response is defined by the object query and pre-fetch path(s) entered by the application.

As per claim 24, Srinivasan teaches "computer program comprising program code means for performing any of steps of claim 1 when the program is run on a computer" at Fig. 2, element 204 where computer program is run on the processor.

As per claim 25, Srinivasan teaches "computer program as claimed in claim 24, the program code means being stored in a computer readable medium" at Fig. 2 where elements 208 and 210 are the computer readable medium.

As per claim 26, Srinivasan teaches "a computer program as claimed in claim 24 for finding an object in a computerized control system" at Fig. 4, elements 402-404 are the computer program for finding, receiving and converting to an object.

4. Claims 28 and 32 are rejected under 35 U.S.C. 102(e) as anticipated by Rishe (U.S. Publication 2002/0107840).

As per claims 28 and 32, Rishe teaches the following:

"a processor adapted for object oriented data processing" at Page 2, [0023] where a processor interprets user's query and retrieves desired data;

"data storage means adapted for storing data objects, the objects being enabled to have relationships between each other and to be associated with different relationship

groups" at Page 3, [0025] where a storage assembly to store object data items from each of the information categories is included and at Page 3, [0026] where there exist relationship categories for defining relationships between objects into various categories or groups; and

"wherein the data processing system is adapted to provide the processor with an indication of the location of an object in the data storage means based on information regarding a name associated with the object, relationships the object has with others of the objects, and the relationship groups" at Page 2, [0023], Page 3, [0025]-[0026] where processor is to interpret user query and to retrieve desired data, the storage means is to store object items, and object relationship groups are to define object relationships into categories.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 5-6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivasan et al. (U.S. Patent 5,893,108, hereafter "Srinivasan"), as applied to claims 1-4, and further in view of Farrar et al. (U.S. Patent 6,330,552, hereafter "Farrar").

As per Claim 5, Srinivasan teaches query for a path of related objects as described in Item 3 for the rejections of claims 1 through 4.

Srinivasan does not specifically teach "an object with the lowest cost is selected for the further examination".

However, Farrar teaches assigning cost to operators for an access path to database object and selecting the lowest cost plan for executing the query at col. 1, line 57 – col. 2, line 9.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Farrar's reference into Srinivasan's by optimizing the search plan for quickly returning the query result. The combination of references would have further accurately estimated the cost of query for a path of objects because of the cost of queries is calculated and the lowest cost could have been selected for further relevance examination.

As to claim 6, Farrar further teaches "the cost is determined for each analyzed object based on the number of relationships each object has with other objects" at col. 1, line 57 – col. 2, line 9 where each of the operator for accessing database is assigned a cost and the lowest cost is selected for execution.

As per claim 15, Farrar further teaches "an object is placed in more than one location in the structures" at Fig. 4, where element 414 is placed on both 412-414 and 410-414 structures .

6. Claims 13-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivasan et al. (U.S. Patent 5,893,108, hereafter "Srinivasan), as applied to claim 1, and further in view of Li (U.S. Patent 5,787,275).

As per claim 13, Srinivasan teaches query for a path of related objects as described in Item 3 for the rejections of claim 1.

Srinivasan does not specifically teach "the objects are enabled to have more than one name".

However, Farrar teaches assigning class to a class name at col. 10, lines 5-35.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Li's reference into Srinivasan's by assigning different class names to a same class because both references are devoted to identifying relationships between objects and the combination of the references would have been able to provide flexibility on identifying and analyzing relationships in object oriented systems.

As per claim 14, Li further teaches "the different names for an object are indicated by aspects of the object" at col. 10, lines 5-35 by creating multiple entries of the processed table for a class.

7. Claims 17-18 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivasan et al. (U.S. Patent 5,893,108, hereafter "Srinivasan), as applied to claims 1-4, and further in view of Brown et al. (U.S. Patent 5,875,446, hereafter "Brown").

As per claim 17, Srinivasan teaches query for a path of related objects as described in Item 3 for the rejections of claims 1 through 4.

Srinivasan does not specifically teach "the objects are enabled to have more than one name".

However, Farrar teaches assigning class to a class name at col. 10, Brownnes 5-35.

It would have been obvious to one having ordinary skill in the art at the time of the

applicant's invention was made to combine Brown's reference into Srinivasan's by

assigning different class names to a same class because both references are devoted

to identifying relationships between objects and the combination of the references would

have been able to provide flexibility on identifying and analyzing relationships in object

oriented systems.

Brown further teaches "the step of selecting a second object in the event that it is

determined impossible to select the queried path of related objects based on said one

selected object" at col. 6, lines 55-67 where view generator select structurally relevant

objects by calculating ranks of parent and relevant objects and the structural

relationships they participate.

As per claim 18, Brown further teaches "selecting the second object comprises

selection of an object with a different number of relationships than what said one object

has" at col. 6, lines 55-67 where view generator select structurally relevant objects by

calculating ranks of parent and relevant objects and the structural relationships they

participate.

As per claim 23, Brown further teaches "selecting objects for the analysis of the

relationships based on the information included in the query" at col. 6, lines 63-67 where

the hierarchical view generator aggregates topically relevant objects based on their

relationships and generates ranked hierarchies of both the topically relevant objects and

structurally relevant objects to present to the user.

8. Claim 27, 29-31 and 33-35 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Rishe (U.S. Publication 2002/0107840) and further in view of

Srinivasan et al. (U.S. Patent 5,893,108, hereafter "Srinivasan).

As per claim 27, Rishe teaches the following:

"associating objects representing real world entities to different relationship groups

based on characteristics of the real world entities" at Page 4, [0034] where the concept

of object is the real world entity whose information is in database and information is

grouped into a variety of tables (Page 1, [0007]);

"initiating a search for an object by means of a query string containing information

regarding the object" at Page 3, [0026] user query includes at least a relationship

identifier which associates at least one object item from the object category; and

"searching for the object based on a name associated with the object, relationships the

object has with other objects and information that associates with relationship groups

relevant for the searched object" at Page 3, [0026] by including the relationship identifier

in the user query for effectively interpreting the query and identifying the desired data.

Rishe does not specifically teach "selecting a path of related objects that corresponds

information in the query string and includes the searched object".

However, Srinivasan teaches object query and associated paths for pre-fetch are

analyzed to generate a set of database queries at col. 3, lines 46-48.

It would have been obvious to one having ordinary skill in the art at the time of the

applicant's invention was made to combine Srinivasan's reference into Rishe's by

embedding object name and pre-fetch path into user's query string because both

references are devoted to identifying relationships between objects, efficiently selecting objects. The combination of the references would have been able to provide flexibility on identifying and analyzing relationships in object oriented systems and quickly retrieved the desired objects.

As per claims 29 and 33, Srinivasan further teaches "the indication is based on a path of related objects, the object being one object on the path of related objects" at col. 3, lines 36-40 and 47-49 where object query and associated set of pre-fetch paths are generated".

As per claims 30 and 34, Srinivasan further teaches "the processor is adapted to generate a query containing information regarding the object and at least one other object having a relationship with the object" at col. 3, lines 36-40 and 47-49 where object query and associated set of pre-fetch paths are generated".

As per claims 31 and 35, Rishe teaches "the processor is adapted to control operation of a system consisting of real world entities, the real world entities being represented by objects stored in the storage means" at Page 4, [0034] where the concept of object is the real world entity whose information is in database and information is grouped into a variety of tables (Page 1, [0007]);

Conclusions

9. The prior art made of record

   A. U.S. Patent   5,893,108

   B. U.S. Publication 2002/0107840

   C. U.S. Patent   5,875,446

        D. U.S. Patent   6,330,552

        E. U.S. Patent   5,787,275

The prior art made of record and not relied upon is considered pertinent to applicant's

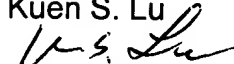disclosure.   F. U.S. Patent   5,809,505

        G. U.S. Patent   6,175,835

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kuen S Lu whose telephone number is 703-305-4894. The

examiner can normally be reached on 8 AM to 5 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Breene can be reached on 703-305-9790. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703-305-3900.

Kuen S. Lu
Patent Examiner

May 12, 2004

JOHN BREENE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100